

Applicant : Shalaby, Shalaby W.  
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#### REMARKS

This amendment is responsive to the Office Action mailed April 7, 2004. Original claims 1-46 are under examination in the present action. All pending claims stand rejected.

1. Applicant is grateful for the acceptance of the request for continued examination under 37 C.F.R. §1.114, the withdrawal of the finality of the previous office action pursuant to 37 C.F.R. §1.114 and the entry of Applicant's submission filed December 30, 2003.

2. Claims 1-46 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. In particular, "bound microparticle" as used in claims 1-46, was found to lack a definite and clear meaning. Applicant respectfully directs the Examiner's attention to page 13 of specification wherein the Applicant has defined a "bound microparticle" as "particles of absorbable polyester...having one or more peptide and/or one or more protein ionically immobilized on the microparticle." It is well-established that "a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning," Process Control Corp. v. Hydrex Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999) citing Digital Biometrics v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998)). Applicant asserts that the Examiner's confusion as to what is bound is unwarranted, however, in an effort to advance the prosecution of the instant

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application, Applicant has amended to the claims set to delete "bound" and have effectively imported the definition of a "bound microparticle" into claim 1 by inserting "ionically" before immobilized. Support for this amendment is found in the instant application at page 13, lines 14-17.

3. Claims 23 and 25 were rejected under 35 U.S.C. §112, second paragraph, apart from the aforementioned ambiguity, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. In particular, claims 23 and 25 were found to be unclear for use of "optionally." Without conceding the appropriateness of this rejection, claims 23 and 25 were further amended and new claims 47 and 48 were added to better define the intent of the Applicant. Applicant originally used "optionally" to claim pharmaceutical compositions that need not have an acceptable carrier, but desirably contained a carrier. Claims 23 and 25 have been amended to claim a pharmaceutical composition comprised of the novel microparticles or encased microparticles and a gel-forming liquid polyester only. New claims 47 and 48 which are dependent on claim 23 and 25, respectively, are directed to the pharmaceutical compositions having an additional acceptable carrier.

4. Claims 42 and 46 were further rejected under 35 U.S.C. §112, second paragraph, on separate grounds, for not properly reciting an antecedent basis. Without conceding the correctness of this rejection, Applicant has amended claims 42

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and 46 as suggested by the Examiner. Based on the foregoing, Applicant respectfully requests reconsideration of the rejection of claims 1-46 under 35 U.S.C. §112, second paragraph, and withdrawal of these rejections.

5. Claims 1-11, 22, 23 and 26-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shalaby et al. (U.S. 5,672,659) or Ignatious et al. (WO97/39738) in view of Shalaby and Chesterfield et al. (U.S. 5,366,756). Without conceding the correctness of this rejection and in an effort to better define the invention of the instant application, claim 1 has been amended to require that the bioactive peptide is ionically immobilized on the surface and subsurface of the polymer core. Support for this amendment can be found in the instant application at page 13, lines 29-36. The definition of what is the subsurface is give at page 14, lines 4-7. Both U.S. Patent 5,672,659 and International Patent Application WO97/39738 discuss the formation of ionic conjugates "designed to be chemically uniform compositions made of ionic molecular conjugates," See U.S. 5,672,659, col. 11, lines 28-31, wherein the bioactive peptide is dispersed throughout the complex. As amended, claim 1 requires that the bioactive peptide be substantially located on the outer surface of the peptide, thus removing conjugates, such as those described in U.S. 5,672,659 and WO97/39738, from the scope of claim 1.

U.S. Pat. No. 5,612,052 describes cation-exchanging microparticles made typically of carboxyl-bearing hydrophilic

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block onto which basic bioactive agents are immobilized thereon wherein said block is comprised of polymeric non-polyester poly(oxyethylene), a polysaccharide or derivatives thereof. See U.S. 5,612,052, col. 8, lines 22-31. U.S. 5,612,052 does not teach, suggest or infer use of an absorbable polyester as claimed in the instant application. U.S. Patent 5,366,756 describes a method for preparing porous bioabsorbable surgical implant material wherein the implant material is coated with a bioabsorbable implant material. As amended, claim 1 requires that the bioactive peptide be immobilized on the polymer core ionically. The coating of the '756 patent is not ionically immobilized on the implant materials.

Applicant respectfully contends that based on the foregoing, the Examiner has failed to establish a *prima facie* case of "obviousness" under 35 U.S.C. §103(a). The Court of Appeals for the Federal Circuit has established the criteria for a finding of obviousness as follows:

Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051-52, 5 USPQ 1434, 1438 (Fed. Cir. 1988), cert. denied, 109 S.Ct. 75 (1988), on remand, 13 USPQ2d 1192 (D.Conn. 1989), "something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination."; *In re. Stencel*, 828 F.2d 751, 755, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987), "obviousness cannot be established 'by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion that the combination be made.'; *Alco Standard Corp. v. Tennessee Valley Authority*, 808 F.2d 1490, 1498, 1 USPQ2d 1337, 1343 (Fed. Cir. 1986), cert. denied, 108 S.Ct. 26 (1987), "the question is not simply whether the prior art 'teaches' the particular element of the invention, but whether it would 'suggest the desirability, and thus the obviousness, of making the

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combination."; Carella v. Starlight Archery, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986); ACS Hospital System, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 USPQ 929 (Fed. Cir. 1984), "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so."

Donald S. Chisum, Patents, A Treatise on the Law of Patentability, Validity and Infringement, Vol. 2, 5-218, 1992, (emphasis added). Applicant respectfully submits that none of the references cited provide the proper motivation to combine their teachings as done by the Examiner. Absent such motivation, the rejection of claims 1-11, 22, 23 and 26-33 based on a combination of either U.S. 5,672,659 or WO97/39738 in view of either U.S. 5,612,052 and U.S. 5,366,756 should be withdrawn. Applicant respectfully requests reconsideration and withdrawal of this rejection.

6. Claims 12-21, 24, 25 and 34-46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over either U.S. 5,672,659 or WO97/39738 in view of either U.S. 5,612,052 and U.S. 5,366,756 and further in view of WO92/11844 and U.S. 5,795,922. With respect to the patentable differences between the teachings of the instant application and those of U.S. 5,672,659, WO97/39738, U.S. 5,612,052 and U.S. 5,366,756, Applicant adopts and restates the above comments in full herein.

Without conceding the correctness of this rejection, Applicant has amended claim 12 so as to be dependent on claim 1.

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Claim 12 is now directed to an encased microparticle of claim 1. Applicant respectfully disagrees with the relevance of WO92/11844 which is directed to a *method* of stabilizing a biologically active protein by *complexing* it with a polycation. WO92/11844 *does not* discuss bound microparticles in which a biologically-active peptide is immobilized on the surface of an absorbable heterochain polymer. To the contrary, the WO92/11844 microspheres *cannot* contain the peptide on their surface. According to WO92/11844, microspheres containing a protein- WO92/11844 pages 7-9. In the first step of the Auer process, a protein-polycation complex is atomized into small particles, according to the process described by *Gombatz et al.* The protein-polycation microparticles are then ***incorporated into*** or ***encased by*** a biodegradable polymer using the procedures outlined again by *Gombatz, et al.* The 2<sup>nd</sup> phase of the WO92/11844 process produces biodegradable microparticles *containing* the biologically-active agent with the polymer. Unlike the microparticles of the above-referenced application, the biologically active agent of the microparticles of WO92/11844 ***does not bond with the polymer***, but instead interacts with ***a biological polycation***, examples of which are poly(lysine) and poly(arginine). See WO92/11844 et al. page 6, lines 20-21. WO92/11844 describes the interaction between the biological agent and the polycation as "electrostatic" in nature, See WO92/11844 page 6, lines 8-9, which are dissimilar to the ***ionic*** interactions that immobilize the biologically-active peptide ***on*** the surface of

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the heterochain polymer like the novel microparticles of the present application. See present application at page 13, line 35. Applicant contends it would not have been apparent from WO92/11844 that a biological agent could be immobilized on the surface of the polymer of the microsphere.

As for U.S. 5,612,052, the Examiner correctly states that it teaches the encapsulation of radiopacifier into a polymer/monomer matrix. Applicant contends, however, that U.S. 5,612,052, does not teach or infer the encasing of the novel microparticles of the instant application.

As before, neither WO92/11844 nor U.S. 5,612,052 provide the requisite motivation to combine their teachings with the teachings of U.S. 5,672,659 or WO97/39738 in further view of either U.S. 5,612,052 and U.S. 5,366,756. As such, the rejection of claims 12-21, 24, 25 and 34-46 under 35 U.S.C. §103(a) should be withdrawn.

#### **CONCLUSION**

Applicant submits that the grounds for rejection asserted by the Examiner have been overcome, and that the claims, as now pending, define subject matter that is novel and nonobvious over the prior art. On this basis, it is submitted that allowance of the instant application is proper, and early favorable action is solicited.

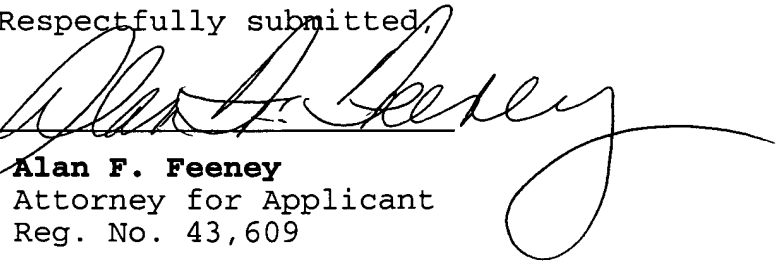
Pursuant to 37 C.F.R. 1.136, Applicant hereby petitions that the period for response to the pending office action be extended for three months to and including October 7, 2004.

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Should Examiner Naff deem any further action is required of the Applicants to place this application in a condition for issue, she is requested to telephone the Applicant's undersigned representative.

Respectfully submitted,

Date: 9-29-2004

  
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